Tuttle Creek Lake, Kansas

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US Army Corps
of Engineers
Kansas City District
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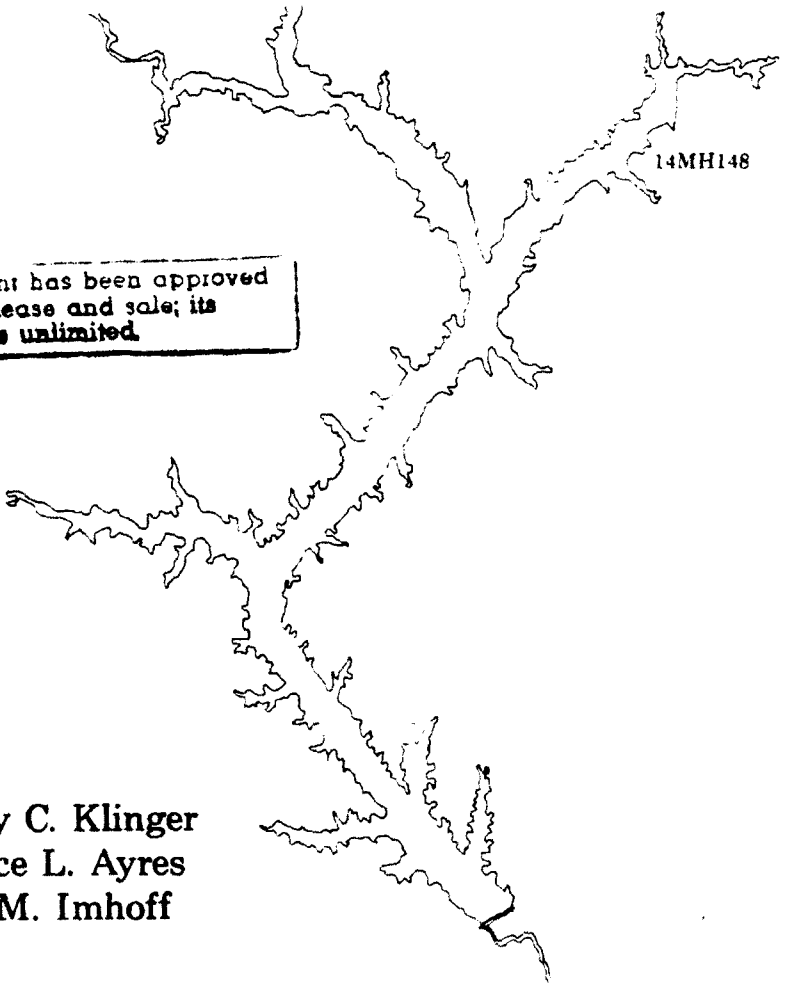
Burns & McDonnell
Kansas City, Missouri

Test Excavations at 14MH148, Marshall County, Kansas

Contract No. DACW41-86-D-0024



By:
Timothy C. Klinger
Lawrence L. Ayres
Steven M. Imhoff

1992

TUTTLE CREEK

Test Excavation at 14MH148
Marshall County, Kansas

Prepared for

U.S. Army, Corps of Engineers
Kansas City District

under

Contract DACW41-86-D-0024

by

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with

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Historic Preservation Associates Report 88-22

for

Burns & McDonnell
Kansas City, Missouri

1992

The study performed herein by the contractor for the Corps of Engineers is authorized in the National Historic Preservation Act of 1966 (PL 89-665) as amended. Accomplishment of this work provides documentation evidencing compliance with Executive Order 11593, "Protection and Enhancement of the Cultural Environment" dated 13 May 1971, and section 110 of the National Historic Preservation Act."

Funds for this investigation and report were provided by the U.S. Army Corps of Engineers. The Corps may not necessarily agree with the contents of this report in its entirety. The report reflects the professional views of the Contractor who is responsible for the collection of the data, analysis, conclusions and recommendations.

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The site encompasses roughly 45,000 M^2 and contains a Plains Woodland component and possibly an Archaic one as well. The deposits were restricted to plowzone depth and no intact cultural remains were encountered. However, because approximately 80% of the site is situated on private property and has not been investigated, its eligiblity for inclusion on the National Register cannot be assessed at this time.

No additional archeological work is recommended because additional adverse impact, such as uncontrolled collecting and digging, resulting from the proposed sale cannot be assumed. Private ownership may, in fact, confer protection not possible on public lands by limiting access.

ABSTRACT

This report documents test excavations conducted at 14MH148 by Historic Preservation Associates in July 1987. 14MH148 is a prehistoric site located within the former Town of Barrett near Tuttle Creek Lake, Marshall County, Kansas. The property is presently owned by the Kansas City Corps of Engineers and is slated for sale as excess land. The investigations were intended to determine if cultural resources were present that would merit inclusion in the National Register of Historic Places.

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INTRODUCTION

BACKGROUND

In order to fulfill its obligations under the National Historic Preservation Act of 1966 (PL89-665), the National Environmental Policy Act of 1969 (PL91-190) Executive Order 11593 of 13 May 1971, the Archeological and Historic Preservation Act of 1974 (PL93-291) and the Procedures for the Protection of Historic and Cultural Properties (36CFR800), the Kansas City District of the U. S. Army Corps of Engineers (COE) issued an Indefinite Delivery contract for water resources planning studies (DACW41-86-C-0024) to Burns and McDonnell Engineering Company of Kansas City.

As part of that contract, a delivery order was issued for National Register evaluation of a prehistoric archeological site (14MH148) located on Tract S1904 at the Tuttle Creek Lake Project, Marshall County, Kansas. This work was subcontracted to Historic Preservation Associates (HPA) by an agreement dated 1 July 1987.

PURPOSE OF THE REPORT

This report documents archeological test excavations at 14MH148 which were intended to asses the nature, extent and significance of the site relative to National Register of Historic Places (NRHP) criteria. This report follows the guidelines and standards of fieldwork and reports contained in Appendix C of the Kansas Prehistoric Archaeological Preservation Plan and the Scope of Work (Appendix A).

PROJECT DESCRIPTION AND DATES OF INVESTIGATION

14MH148 is located in the proposed Barrett Excess project area of Tuttle Creek Lake, a short distance southwest of Frankfort in southern Marshall County, Kansas (Figure 1). The site is located partially within the boundaries of the old town of Barrett that is now owned by the Corps. It is situated on the floodplain of the Black Vermillion River at the confluence of Cedar Creek. Part of the site was in cultivation until recently and the field bears scour marks caused by recent floods (personal communication with Tuttle Creek Project personnel). Artifacts are distributed over an area estimated at 45,000 square meters (150 m x 300 m). The artifact dispersion on COE property covers about 9,800 square meters (70 m x 140 m). The National Register of Historic Places (NRHP) eligibility of the historical site of Barrett has previously been investigated by Environmental Systems Analysis, Inc. (ESA) of Shawnee Mission, Kansas. The field investigations by HPA began on 7 July 1987 and were completed on 9 July 1987.

SPONSOR, PARTICIPANTS AND CURATION

The U.S. Army Corps of Engineers, Kansas City District, sponsored these investigations through Burns & McDonnell Engineering Company of Kansas City, Missouri. Mr. Dale Trott served as liaison between Burns & McDonnell and HPA.

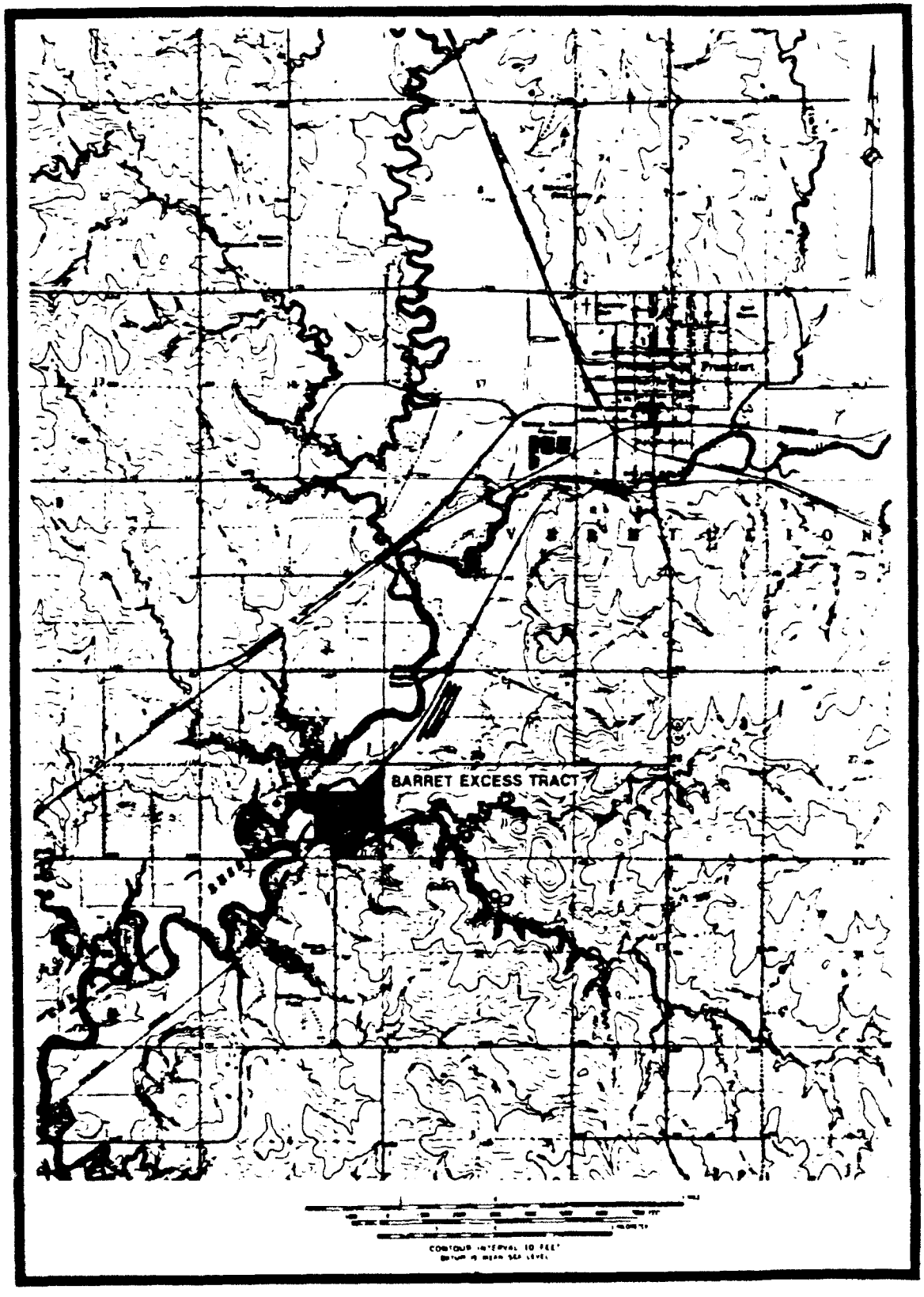

Figure 1. Project vicinity map

Mr. Timothy C. Klinger, Director of Historic Preservation Associates, served as Principal Investigator. Mr. Lawrence L. Ayres supervised the field work and was assisted by Mr. David B. Board who also assisted with processing and the analysis of the artifacts.

All artifacts and accompanying records as well as Kansas State Historical Society site forms will be curated by the Kansas State Historical Society.

PROJECT GOALS AND SCOPE OF WORK

PROJECT GOALS

The goals of the project were to determine the eligibility of 14MH148 for inclusion on the National Register of Historic Places. Data concerning the horizontal and vertical extent, condition, period(s) of occupation and function of the site were required. Recommendations for possible alternatives for preservation or mitigation were required if the site was determined to be eligible for inclusion on the NRHP. The HPA assessment was guided by four basic questions:

1. What is the condition of the site?
2. What are its horizontal and vertical dimensions?
3. During what period(s) was the site occupied?
4. What activities were carried out at the site?

The primary goal of the project was to assemble the data gathered by HPA and previous investigators into a set of coherent facts that could be used to answer these questions and, thereby, arrive at an informed assessment of site significance relative to National Register criteria. Once these general questions were answered, more specific research goals, such as those contained in the State Plan, could be considered.

SCOPE OF WORK

HPA was directed to complete an investigation that determines: a) what archeological resources are present; b) the horizontal, vertical and temporal extent of the cultural resources; c) the potential cultural and scientific importance of the resources present; d) the site's potential for NRHP eligibility; and e) possible alternatives for preservation or mitigation if required. HPA had the responsibility of conducting a literature search as well as a testing program designed to provide sufficient data to allow the determination of the eligibility of the site for NRHP inclusion and to produce site forms, site maps and photographs for documentation. All artifact collections resulting from the investigation were to be subjected to identification, analysis and interpretation prior to being prepared for delivery to and curation by a qualified repository. As a result of the above, HPA was to produce a brief summary of findings at the conclusion of the field work, both draft and final reports, all documentation including site forms and maps and both draft and final NRHP forms if the site was determined eligible.

ENVIRONMENTAL SETTING

PHYSICAL ENVIRONMENT

Geology and Physiography

The Tuttle Creek project area is located within the Glaciated Region of Kansas approximately 10 to 15 km northeast of the border of the Flint Hills Uplands of the Central Lowland physiographic province. According to Mandel (1987:III 3-4) the surface of this area of the state is the result of the continental ice sheet that extended into Kansas during the Kansan glacial episode. While the plain is underlain by Pennsylvanian and Permian bedrock formations, thick deposits of till, outwash and loess conceal the cuesta-type topography. The topography is characterized by smooth, broad, gently rolling hills in the interstream areas while becoming more dissected near the larger river valleys.

Soils

Mandel (1987:III 30) describes the soils in the Glaciated Region as "Typic Udolls of the Mollisol order . . . characterized by deep and shallow, black and very dark brown silt loams, clay loams, and silty clay loams."

Wabash silty clay loam is the primary soil series that has been recorded at the site with the Nodaway silt loam being located a short distance west:

> The Wabash series consists of deep, very poorly drained, very slowly permeable soils on flood plains. These soils formed in clayey alluvial sediment. Slopes are less than 1 percent.
>
> Wabash soils are commonly adjacent to Kennebec, Muir, and Nordaway soils. Kennebec and Nordaway soils have a fine-silty control section, and an irregular decrease in organic matter content. They are at lower elevations on the flood plains. Muir soils have a fine-silty control section and are at higher elevations on low terraces.
>
> Typical pedon of Wabash silty clay loam . . .
>
> Ap--- 0 - 8 inches; black (10YR2/1) silty clay loam, dark gray (10YR4/1) dry; weak fine granular structure; slightly hard, friable; neutral; abrupt smooth boundary.
>
> A12-- 8 - 13 inches; black (10YR2/1) silty clay loam, dark gray (10YR4/1) dry; few fine faint dark gray (5Y 4/1) mottles; moderate fine blocky structure; hard, firm; slightly acid; gradual smooth boundary.
>
> B1g-- 13 - 28 inches; black (10YR2/1) silty clay, very dark gray (10YR4/1) mottles; strong fine blocky structure; extremely hard, very firm; slightly acid; diffuse smooth boundary.
>
> B2g-- 28 - 60 inches; black (10YR2/1) silty clay, dark gray (10YR4/1) dry; moderate fine subangular blocky structure; extremely hard, very firm; neutral. [Kutnink et al. 1980:41]
>
> The Nodaway series consists of deep, moderately well drained, moderately permeable soils on bottom lands. These soils formed in silty alluvium. Slopes range from 0 to 2 percent.

Nodaway soils are similar to Eudora, Kennebec, and Muir soils and are commonly adjacent to Eudora, Muir, and Wabash soils in the landscape. Eudora, Kennebec, Muir and Wabash soils have a mollic epipedon. The very poorly drained Wabash soils are more clayey and are in low areas. Eudora and Muir soils are typically above the Nodaway soils on low terraces. [Kutnink et al. 1980:38]

The Wabash soil is further described as having a high shrink-swell potential. Due to a high natural fertility most areas of this series are farmed in spite of the tendency of flooding and a slight hazard for erosion (Kutnink et al. 1980:20). Comparatively, the Nodaway series has only a moderate potential for shrink-swell problems and little hazard for erosion though it, like the Wabash series, has a high natural fertility which has led to heavy agricultural use (Kutnink et al. 1980:12).

Flora and Fauna

The vegetation of most of eastern Kansas (including our project area) is dominated by tall grass prairie of the Interior Grasslands although the major drainages are bordered by a band of floodplain or gallery forests. Shelford (1963) describes the grassland as follows (citations have been omitted):

Life Forms and Life Habits of Important Constituents

The grassland is a community dominated by herbs. The herbs are divisible into grasses and forbs, the grasses being the dominants. The community and habitat relations of such sedges as Carex filiformis and C. stenophylla are essentially the same as short grasses.

Dominants and influents which give unity to the biome by their ubiquitous presence are the grasses, Junegrass, blue grama, side-oats grama, hairy grama, needle-and-thread, treen needlegrass, sheep fescue, little bluestem, buffalo grass, and the animals, bison, pronghorn, badger, jack rabbit, and the grasshopper Melanoplus mexicanus.

Grassland vegetation is layered both below and above ground. In most grasslands the grasses are of two or more heights. In the tall-grass prairie, the grasses are 50 to 150 centimeters high. . .

Major Permeant Dominants and Influents

In 1600 there were probably 45,000,000 bison occurring in all parts of the grassland of North America, except California. . . . The animals made trails over the grassland and through the stream-skirting forest in their quest for water. The bison was a dominant in the mixed prairie and the western edge of the tall-grass areas and was an influent elsewhere.

The pronghorn had a population similar to that of the bison. . . . It occurred in all types of grassland, although its activities were limited to the western part of the tall-grass community. . . .

The white-tailed jack-rabbit of the northern grasslands and the blacktailed jack rabbit of the southern grasslands have their ranges overlap roughly between 36° and 42° N. Lat. They made definite trails across the plains when populations were large. Jack rabbits prefer short grasses with borders or mid grasses for shelter.

The cottontail, wapiti, and deer are secondary influents in the grassland wherever there are considerable stream-skirting forests. Predators operate throughout the grassland. Some of the predatory birds are restricted to the vicinity of the stream-skirting forests. The wolf, coyote, and kit fox are able to live in pure grassland.

The badger is universally present, digging for rodents. Burrowing rodents near the center of the grassland area include ground squirrels, prairie dogs, pocket gophers, two species of pocket mice, and a kangaroo rat, all of which have large populations. Moles and shrews disturb the surface of the ground, and large numbers of grasshopper mice live in holes made by other species. There is also a number of predators which burrow into the ground, such as the black-footed ferret and kit fox, which are characteristic of grassland, and wolf, coyote, spotted skunks and hog-nosed skunk. . . .

The greater prairie chicken, the burrowing owl, and perhaps the sage grouse are species whose entire lives are spent in open grassland. The bobwhite, sharptailed grouse, and several predatory species requiring more cover exercise considerable influence on the grassland. Small minor influent and permeant birds are the horned lark, lark sparrow, lark bunting and vesper sparrow. . . .

Of reptiles, the bullsnake or gopher snake is found throughout and feeds on rodents. Grasshoppers and ants are the outstanding groups among grassland insects. There are more than 250 species of grasshoppers originally restricted largely to the grassland. . .[Shelford 1963:331-333].

Climate

The climate of Marshall County is described as:

. . .the typical continental type expected in the interior of a large land mass in the middle latitudes. It is characterized by large daily and annual variations in temperature. Winters are cold because of the frequent outbreaks of air from the Polar regions. Winter conditions prevail from December to February. Warm temperatures of summer last for about 6 months every year, and the transition seasons of spring and fall are relatively short. The warm temperatures provide a long growing season for crops in the county.

Marshall County frequently receives currents of moisture-laden air from the Gulf of Mexico. Precipitation is heaviest late in spring and early in summer. Most of it comes in thunderstorms late in evening or at night. Although the total precipitation is generally adequate for any crop, its distribution may cause

problems in some years. Prolonged dry periods of several weeks duration are not uncommon during the growing season. A surplus of precipitation often produces muddy fields that delay planting and harvest operations.

Tornadoes and severe thunderstorms occur occasionally in Marshall County; they are usually local and of short duration so that risk is small. Hail occurs during the warmer part of the year, but it is infrequent and of local nature. Crop damage by hail is less in this part of the state than it is in western Kansas. . . .

In winter the average temperature is 28.0 degrees F, and the average daily minimum temperature is 16.7 degrees. The lowest temperature on record, which occurred at Frankfort on February 13, 1905, is -35 degrees. In summer the average temperature is 76.2 degrees, and the average daily maximum temperature is 88.5 degrees. The highest recorded temperature, which occured [sic] on June 25, 1911, is 114 degrees.

The total annual precipitation is 31.29 inches. Of this, 23.71 inches, or 76 percent usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 20.34 inches. The heaviest 1-day rainfall during the period of record was 6.10 inches at Marysville on July 24, 1972.

The average seasonal snowfall is 19.6 inches. On an average of 25 days, at least 1 inch of snow is on the ground. The number of such days varies greatly from year to year.

The sun shines 75 percent of the time possible in summer and 60 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 13 miles per hour, in March and April [Bark 1980:1-2].

Site-Specific Environment

The specific project area is located on the flood plain of the Black Vermillion River. Frequent flooding has produced a deep (ca 2 m) swale that partially encircles the site along the east and south. Tuttle Creek Project personnel indicated that the swale was the result of floods in the past few years. Flood damage in the form of scours were obvious throughout the site.

Land use in the project area has included transportation (dirt road and railroad), historic occupation (Barrett townsite) and agriculture. Other cultural evidence suggests that an historic structure(s) had been located at least very close to the site under investigation but the primary use during recent times has been agriculture. According to Tuttle Creek Project personnel the field was used for growing corn as recently as 1986 and at the time of the investigation the remains of corn stalks were common throughout the area. Due to floods since the last corn harvest there was little debris left to obscure the ground surface resulting in excellent visibility.

CULTURAL ENVIRONMENT

Table 1 outlines the general cultural sequence in the project vicinity. Cultural evidence from almost the entire range of periods have been recorded

Table 1.
Cultural sequence for the Big Blue River Basin
(After Schmits et al. 1987:209)

Cultural Period	Cultural Phase	Date Range
Protohistoric	Kansa	A.D. 1300 - 1700
Plains Village	Smoky Hill	A.D. 900 - 1300
Plains Woodland	Schultz	A.D. 450 - 700
	Undefined Complexes	
Late Archaic	Walnut	550 - 50 B.C.
	El Dorado	2050 - 1050 B.C.
	Black Vermillion	3350 - 2550 B.C.
Middle Archaic	Side-Notched Tradition	5050 - 4050 B.C.
Early Archaic	Poorly Known Complexes	
Paleo Indian	Plainview/Dalton	8550 - 7050 B.C.
	Folsom	8550 - 8050 B.C.
	Clovis	9550 - 8550 B.C.

around Tuttle Creek Lake. Schmits et al. (1987:208-225) indicate that evidence of Paleo-Indian Period occupation includes Clovis type fluted points at the Diskau site located just west of the lake, Folsom fluted points at the Coffey site, Scottsbluff and Dalton points at 14RY351 and plainview points at 14MH33 and 14PO358/382.

Evidence of Early Archaic activities includes lanceolate and side-notched points at the Coffey Site. Middle Archaic components have been identified at the Diskau Site, 14PO2 and 14RY108 while Late Archaic components are common with Walnut, El Dorado and Black Vermillion phases identified at sites within the Tuttle Creek Reservoir.

Plains Woodland occupations have been identified at seven sites (14GE6, 14GE41, 14GE303, 14MH1, 14MH28, 14PO2, 14PO6, 14PO14 and 14RY356) in the immediate area. 14GE303, 14PO2 and 14RY356 also exhibit Plains Village components. Two of these (14MH1 and 14PO14) have been excavated with the latter producing cultural materials similar to Schultz Phase sites.

Plains Village components are common in the area and have been identified at 16 sites (14CY102, 14DN325/326, 14GE21, 14GE127, 14GE303, 14GE600, 14MH2, 14MH39, 14MH170, 14PO2, 14PO12, 14PO21, 14RY8, 14RY10, 14RY356, 14RY357 and 14RY401) and are affiliated with the Smoky Hill Phase.

Protohistoric Kansa (14PO24, 14PO13) and Pawnee (14GE1) occupations have also been found in the area.

PREVIOUS INVESTIGATIONS

A considerable amount of archeological research has occurred in the Tuttle Creek project area since 1952 primarily due to the development of the lake. Table 2 provides a list of the previous investigations around the lake based on Schmits et al. (1987:14-17). The table summarizes 35 years of archeological investigations around Tuttle Creek Lake.

Table 2
Archeological projects completed at Tuttle Creek Lake, Kansas

Dates of Fieldwork	Project Name	Sponsoring Agency	Type of Work	Archeologist
1952-53	Appraisal of the Archaeological and Palentological Resources of the Tuttle Creek Reservoir	Smithsonian River Basin Surveys	survey and excavation	Solecki (1953)
1956	Archaeological Investigations at Tuttle Creek Dam	National Park Service	excavation	Kelly (1966)
1957	Archaeological Investigations at the Budenbender Site	Smithsonian River Basin Surveys	excavation	Johnson (1973)
1958	Archaeological Investigations at Tuttle Creek Dam	[volunteer]	excavation	Kelly (1966)
1962	Excavations at the Pishny Site	Smithsonian River Basin Surveys	excavation	Carl Miller Kelly (1966)
1970	Prehistoric Cultural Resources of Tuttle Creek Lake	National Park Service	survey	Johnson et al. (1980)
1971	Excavations at the Coffey Site	Kansas State University	excavation	O'Brien et al. (1973)
1972-74	Excavations at the Coffey Site	National Park Service	excavation	Schmits (1978)
1975	Archaeological and Geological Investigations at the Coffey Site	National Park Service	excavation	Schmits (1981)
1975	Cultural Resources Management Plan for Tuttle Creek Lake	Corps of Engineers	management plan	Ziegler (1976)
1977	Cultural Resource Studies: Tuttle Creek Lake and Marysville Flood Study Area	Corps of Engineers	survey	Iroquois Research Institute (1977)
1979	Intensive Cultural Resources Survey at Tuttle Creek Lake	Corps of Engineers	survey	Miller & Schmits (1982)
1985-87	National Register Evaluation of Cultural Resources at Tuttle Creek Lake	Corps of Engineers	excavation	Schmits et al. (1987)

INVESTIGATIONS AT THE LOCATION OF 14MH148

14MH148 is located partially within the historic town site of Barrett, Kansas. According to Schmits et al. (1987:143) Barrett was originally acquired by the Corps of Engineers as part of the Tuttle Creek Lake Project. When the town site became part of the properties proposed as excess real estate it was necessary to evaluate the National Register status prior to sale. The evaluation of the historic town site was accomplished between 1985 and 1986 resulting in the determination by the Kansas State Historic Preservation Program that the historic site of Barrett was not sufficiently significant in terms of historical archaeology to be National Register eligible (Schmits et al. 1987:200). However, during the investigations of the historic site a prehistoric site was observed within the boundaries of the town site.

The following is a summary of the investigations at the prehistoric site based on information provided by Tuttle Creek Project personnel on 7 July 1987:

> Summer 1986 [5-21-1986]: Environmental Systems Analysis (ESA) located the prehistoric site during the investigation of the historic site of Barrett. Schmits and Hedden of ESA made a surface

collection of the site and indicated the location on the Barrett town plat map.

Early October 1986: Tuttle Creek Project personnel visited the site and made a surface collection.

October 1986 [10-9-1986]: Tuttle Creek Project personnel conducted Kansas City District cultural resources personnel to the site. Tuttle Creek Project and Kansas City District cultural resources personnel investigated the site with shovel tests and two 1 m x 1 m excavation units. The test units were placed side by side resulting in single 1 m x 2 m unit. No other subsurface testing was known to have occurred prior to this time.

Other available information includes a short description of the activities at the site on 9 October 1986 that was provided by Tuttle Creek Project personnel from the files at the Tuttle Creek Project Office:

1. On 9 October 1986, personnel from PD-R, OF-TC and OD-R conducted test excavations on a prehistoric site located at the former townsite of Barrett, Kansas. A visual inspection was initially made of the site and an area that showed evidence of substantial cultural remains was chosen in which to place excavation units. Waste flakes, pottery fragments and burnt limestone rocks indicative of a hearth were identified in the area that was subsequently tested. Previous work conducted by personnel from OF-TC consisted of shovel tests along the terrace on which the site was located. These units showed that along the terrace edge cultural material was restricted to the surface and a few cm below.

2. The two contiguous test units dug on 9 October were 2 m x 1 m in size and excavated to a maximum depth of 60 cm below present ground surface. Cultural material encountered was also restricted to the surface and to a depth of 10 cm. The fill throughout the units was a dark gray-brown soil which may have been deposited by recurring inundation of the area. In neither of the units was there any indication of intact subsurface features or cultural material below a depth of 10 cm.

3. Although artifacts are present on and along the terrace, based in the shovel tests and the 2 test units, there is no evidence to indicate subsurface integrity or in situ cultural remains. Given the lack of depth of the cultural component present and the absence of intact features, the site does not appear to meet criteria necessary for recommendation to the National Register of Historic Places. It is the recommendation of this office that this site is not significant and that the townsite of Barrett be excessed without affecting any significant historic properties.

Kansas City District cultural resources personnel indicated that the site had a maximum artifact dispersion of 75 m^2. It was later reported that the artifacts recovered from the two test units excavated on 9 October 1986

included only a few flakes that were probably mixed with the surface collections made by other COE personnel (personal communication 16 August 1987 with Kansas City District cultural resources personnel).

SUMMARY OF THE PREVIOUS INVESTIGATIONS

Prior to the HPA testing, 14MH148 had been characterized as a small (ca 75 m^2) prehistoric site exhibiting deposits no deeper than 10 cm below surface that have been largely destroyed by plowing. The recovery of daub and a large number of potsherds (relative to the total site collection) in combination with a lack of depth and subsurface features suggests that the site may have functioned as a seasonal habitation. A permanent year-round occupation would have probably resulted in obvious midden deposition and the creation of substantial numbers of features. Kansas City District cultural resources personnel had concluded, informally, that the site contained no significant archeological remains and was not eligible for inclusion on the National Register.

METHODOLOGY

FIELD METHODS

Methods used at the site were designed to provide information necessary in answering the basic questions posed earlier. To this end, a general reconnaissance of the area was conducted and excavations undertaken that included systematic shovel testing, posthole testing and the excavation of two 1 m x 1 m test units (Figure 2).

Surface Reconnaissance

The surface reconnaissance was intended to assess the distribution of surface artifacts, locate COE property boundaries and, if possible, find the location of the test unit excavated previously. This was conducted with the assistance of Tuttle Creek Project personnel. The site had been cultivated as recently as 1986 and was covered with a thin growth of weeds and volunteer corn. Ground surface visibility ranged between 50% and 75%. A surface collection was also made. Property corner markers 1250A and 1250A-1, which identify the western boundary of the tract were found and the former used as a datum to which all work was related. The remains of a stone marker for the former Town of Barrett were also located.

Shovel and Posthole Testing

Fourteen shovel tests were excavated along three transects (Figure 2, Tables 3 and 4) to depths ranging from 25 cm to 63 cm. The transects were spaced at 30-m intervals, beginning at the property boundary and shovel tests were excavated along them at 30 m intervals. Test 7 was not excavated due to the presence of standing water. Four posthole tests were excavated in strategic locations to explore more deeply than was feasible by shovel testing. Notes were maintained on soil characteristics and the presence or absence of artifacts.

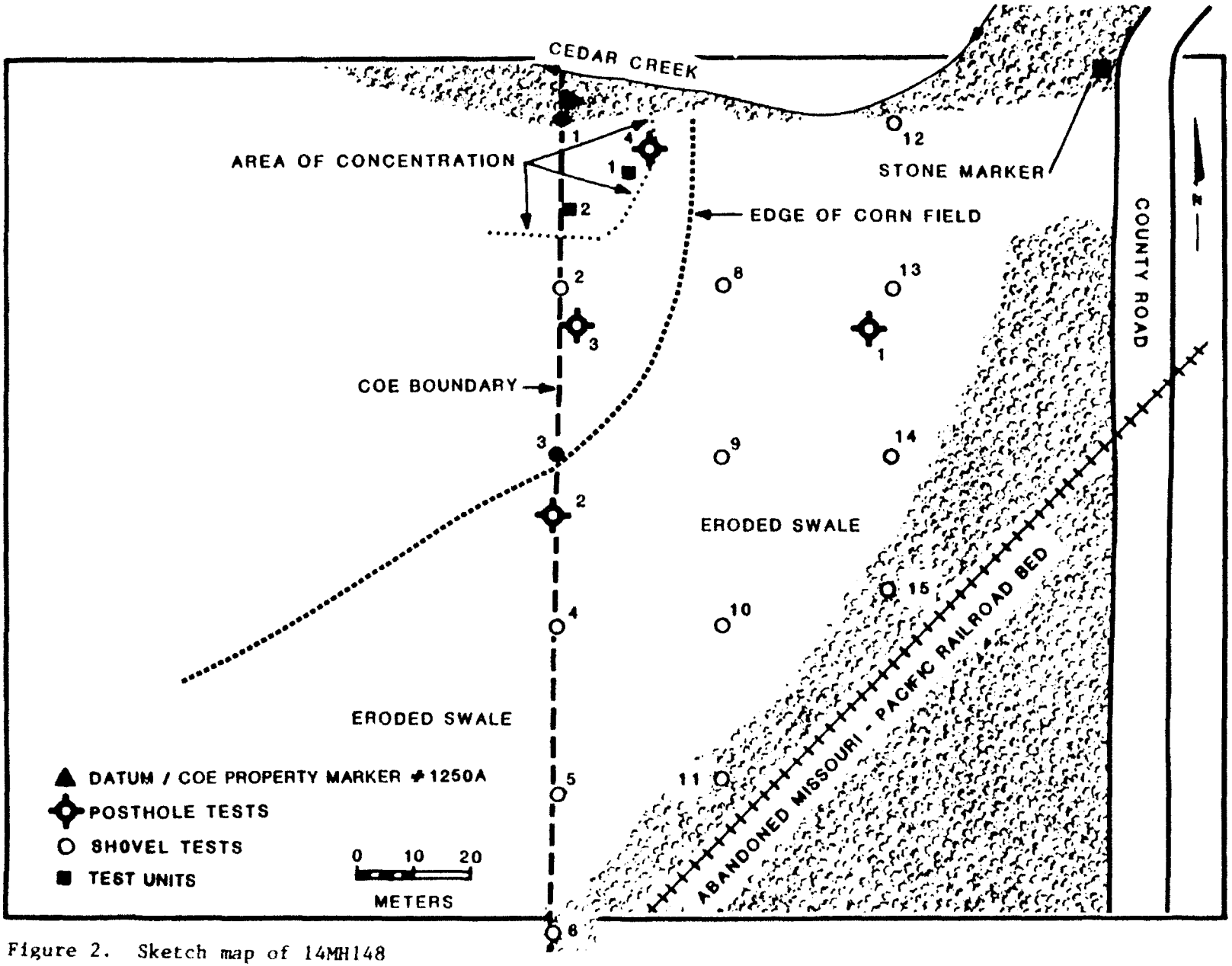

Figure 2. Sketch map of 14MH148

Table 3
Artifacts recovered from 14MH148

Artifact Type	HPA Testing						Previous Collections		
	Shovel Tests ST1	ST3	Test Unit 1 Lev. 1	Lev. 2	Test Unit 2 Lev. 1	Gen. 1987	Reust 1987	ESA 1986	COE 1986
Primary Decort. Flakes			15	3	4	1			
Secondary Decort. Flakes			25	2	13			5	
Interior Flakes	1	1	88	8	29			6	
Retouch Flakes			19	2					
Shatter			4	1	3	5		2	
Unmodified Stone			23	3	16				
Modified Flakes, Convex Edge			3		2				1
Bifaces						7		2	3
Drill								1	1
Dart Points						2			
Arrow Points						2		1	
Preforms						5		4	2
Adze?						1			
Fire-Cracked Rock			2		1			1	
Hammerstone/Abrader						1			
Prehistoric Ceramics			9	4	9	21	19	70	20
Burned Clay (Daub?)			24	2		1		1	
Bone			7	5	1			6	
Historic Materials			7		5			22	2
Concretions									2
TOTAL	1	1	226	30	83	46	19	121	31

1 m x 1 m Test Units

Two 1 m x 1 m test units were placed in the area of highest surface artifact density within COE property. Excavation was accomplished in ten centimeter levels by shovel skimming, troweling and screening the soil through 1/4" mesh hardware cloth. Vertical control was maintained with a line level attached to the northeast corner of each unit and a metric tape. Notes were maintained on soil color and texture, the presence or absence of features and artifact content of each level. Each unit was excavated 20 cm below artifact bearing soils. Test unit 1 was stepped down to a 50 cm x 50 cm unit at 30 cm when the artifact yield indicated that the base of the deposits had been reached. A posthole test was excavated next to the unit to a depth of 130 cm to determine if more deeply buried deposits were present. Test unit 2 was excavated to a depth of 30 cm and a posthole test excavated at its center to a depth of 70 cm.

LABORATORY METHODS

All artifacts recovered were returned to the HPA laboratory in Fayetteville where they were washed and sorted into general categories including flakes, pottery, historic items, etc. The prehistoric lithics were analyzed according to a system that arranges them in a sequence from raw materials to finished tools. The ceramics were sorted on the basis of temper into rim, body and base categories. Each provenience was assigned a catalog number and each analytical unit (i.e., interior flakes, bifaces, dart points,

Table 4
Shovel tests and posthole tests excavated at 14MH148

Test	Soil Color	Soil Texture	Depth (cm)	Artifacts	Comments
Shovel Tests					
1	10YR3/2	Silt loam	0 - 63	+	
2	10YR3/1	Silt loam	0 - 38	-	
3	10YR3/1	Silt loam	0 - 37	+	
4	10YR3/1	Silt loam	0 - 39	-	
5	10YR4/2	Silt loam	0 - 25	-	Near bottom of swale
	10YR3/1	Silt loam	25 - 39	-	
6	10YR3/2	Silt loam	0 - 44	-	
7					Not excavated
8	10YR4/2	Silty clay loam	0 - 48	-	Side of swale
9	10YR4/2	Silty clay loam	0 - 47	-	Side of swale
10	10YR4/2	Silty clay loam	0 - 49	-	Bottom of swale
11	10YR3/1	Silt loam	0 - 44	-	Side of swale
12	10YR4/2	Silty clay loam	0 - 51	-	Side of swale
13	10YR4/2	Silty clay loam	0 - 43	-	Side of swale
14	10YR4/2	Silty clay loam	0 - 42	-	Side of swale
15	10YR3/1	Silty clay loam	0 - 41	-	Side of swale
Posthole Tests					
1	10YR3/1	Silt loam	0 - 90	-	Bottom of swale
2	10YR3/1	Silt loam	0 - 100	-	
3	10YR3/1	Silt loam	0 - 100	-	
4	10YR3/1	Silt loam	0 - 130	-	Next to TU1

etc.) within the provenience was assigned a sub-number and bagged. Each bag of artifacts was labeled with a 3" x 5" tag detailing the site number, provenience, dates of collection and analysis, individuals involved and the contents. Artifacts collected by previous investigators were cataloged and analyzed by HPA, with the exception of the ESA collections. These materials had been previously cataloged and analyzed by ESA and while they were reanalyzed by HPA for the sake of consistency in the data they were left in their original containers and not re-cataloged.

RESULTS

It is important to note that the results detailed below only apply to that part of 13MH148 located on COE-owned land. Although we conducted a surface reconnaissance sufficient to assess the horizontal extent of the surface scatter, subsurface work was conducted only on COE property and the conclusions drawn herein cannot be assumed to apply to the remainder of the site.

DATA RECOVERED FROM THE SURFACE

General surface collections totaling 558 items have been made at the site on at least four occasions (Table 3). Collections taken by ESA, a local collector (Mr. Reust) and COE personnel were made available to us and were analyzed according to standard HPA typologies.

The ESA collections are composed of lithic debris (10.7%), bifaces (1.7%), a drill midsection fragment (0.8%), an arrow point (0.8%), preforms (3.3%), a fragment of fire-cracked rock (0.8%), sand-tempered cord marked ceramics (57.9%), a piece of burned clay (daub?)(0.8%), unworked bone (5.0%), glass (3.3%), stoneware (2.5%), porcelain (0.8%), cut nails (10.7%) and miscellaneous iron (0.8%). The arrow point is biconvex in cross section with straight blade edges. Notches have been cut into the corners to form an expanding stem and barbed shoulders. The exact shape of the stem and base cannot be determined due to breakage. The tip is also missing and the point is too fragmentary to assign to a known type with confidence.

Mr. Reust, a local amateur collector, donated a small collection of 19 sherds obtained from the site. Fifteen of these are sand-tempered, cord marked body sherds and four are rim sherds. One of the rims is plain, one is notched and the remaining two are too badly damaged to identify possible rim treatments.

Materials collected in early October 1986 by Tuttle Creek Project personnel include a modified flake (3.2%), bifaces (9.7%), a drill or awl (3.2%), preforms (6.4%), sand-tempered, cord marked ceramics (64.5%), spherical concretions (6.4%), a clay ball (possibly a marble) and a redware clay pipe bowl fragment. The drill is manufactured from a reworked triangular arrow point and is broken at the tip. Two of the biface fragments appear to be dart point tips while the other is the basal segment of a square-based lanceolate biface or unstemmed projectile point/knife.

The HPA surface collection includes lithic debris (13.0%), bifaces (15.2%), dart points (4.3%), arrow points (4.3%), preforms (10.9%), an adze (2.2%), a hammerstone/abrader (2.2%), sand-tempered, cord marked ceramics (45.7%) and a fragment of burned clay (daub?)(2.2%). One of the dart points has been classified as a Smith Basal Notched and the other is a fragment of a large unidentifiable basally notched point. The arrow points are basal fragments of triangular forms. The hammerstone is formed from a water-worn cobble, exhibits zones of battering and also appears to have zones of light abrading.

DATA RECOVERED FROM THE SHOVEL AND POSTHOLE TESTS

Only two of the 14 shovel tests and none of the four posthole tests excavated at the site yielded artifacts. Shovel tests 1 and 3, both located in the cultivated field, contained one interior flake each. Tests excavated in the swale east and south of the visible surface concentration were culturally sterile and suggest that either the site never extended this far or that the cultural deposits have been destroyed by erosion.

DATA RECOVERED FROM THE 1 M X 1 M TEST UNITS

Stratigraphy and Content of Test Unit 1

Test unit 1 was placed in the area of highest surface artifact density, approximately 13 m south and 12 m east of the site datum (property marker 1250A) near the north edge of the field. This unit was excavated to a depth of 40 cm in four 10-cm levels (Figure 3). The soil was a very dark gray (10YR3/1) silt loam that became increasingly clayey with depth. No cultural stratigraphy was visible (save a 20 cm deep plowzone) and no features or in-situ cultural materials were observed.

Of the 256 items recovered from the unit, 226 were recovered from level 1 (0 cm - 10 cm) and include lithic manufacturing debris (66.8%), unmodified limestone (9.7%) and sandstone (0.4%), modified flakes (1.3%), fire-cracked rock (0.9%), sand-tempered, cord marked ceramics (4.0%), burned clay (daub?)(10.6%), unworked bone (3.1%), cut nails (2.2%) and miscellaneous unidentifiable iron fragments (0.9%). One of the sherds included a loop appendage with an opening large enough to accommodate a small cord.

Level 2 (10 cm - 20 cm) yielded 30 items including lithic manufacturing debris (53.3%), unmodified limestone (10.0%), sand-tempered, cord marked ceramics (13.3%), burned clay (daub?)(6.7%) and unmodified bone (16.7%).

Levels 3 and 4 (20 cm - 40 cm) were culturally sterile.

Stratigraphy and Content of Test Unit 2

Test unit 2 was placed in the area of highest surface artifact density, approximately 19 m south of the site datum near the north edge of the field. This unit was excavated to a depth of 30 cm in three 10-cm levels (Figure 3). A posthole test was excavated in the center of the unit to a depth of 70 cm. The soil was a very dark gray (10YR3/1) silt loam that became increasingly clayey with depth. No cultural stratigraphy was visible (save a 20 cm deep plowzone) and no features or in-situ cultural materials were observed.

All artifacts were recovered from level 1 (0 cm - 10 cm) and include lithic manufacturing debris (59.0%), unmodified limestone (19.3%), modified flakes (2.4%), fire-cracked rock (1.2%), sand-tempered, cord marked ceramics (10.8%), unworked bone (1.2%), a cut nail (1.2%), a screw (1.2%) and miscellaneous unidentifiable iron fragments (2.4%).

Levels 2 and 3 and the posthole test (10 cm - 70 cm) were culturally sterile.

NATURE AND EXTENT OF 14MH148

INTEGRITY OF THE DEPOSITS

The integrity of the cultural deposits investigated by HPA is not good. Recent floods have seriously eroded parts of the area while silting under other parts (personal communication with Tuttle Creek Project personnel). In addition, impact from cultivation has been extensive given the shallowness of the deposits. It can probably be assumed that activities associated with the Town of Barrett have had some degree of adverse effect on the site as well.

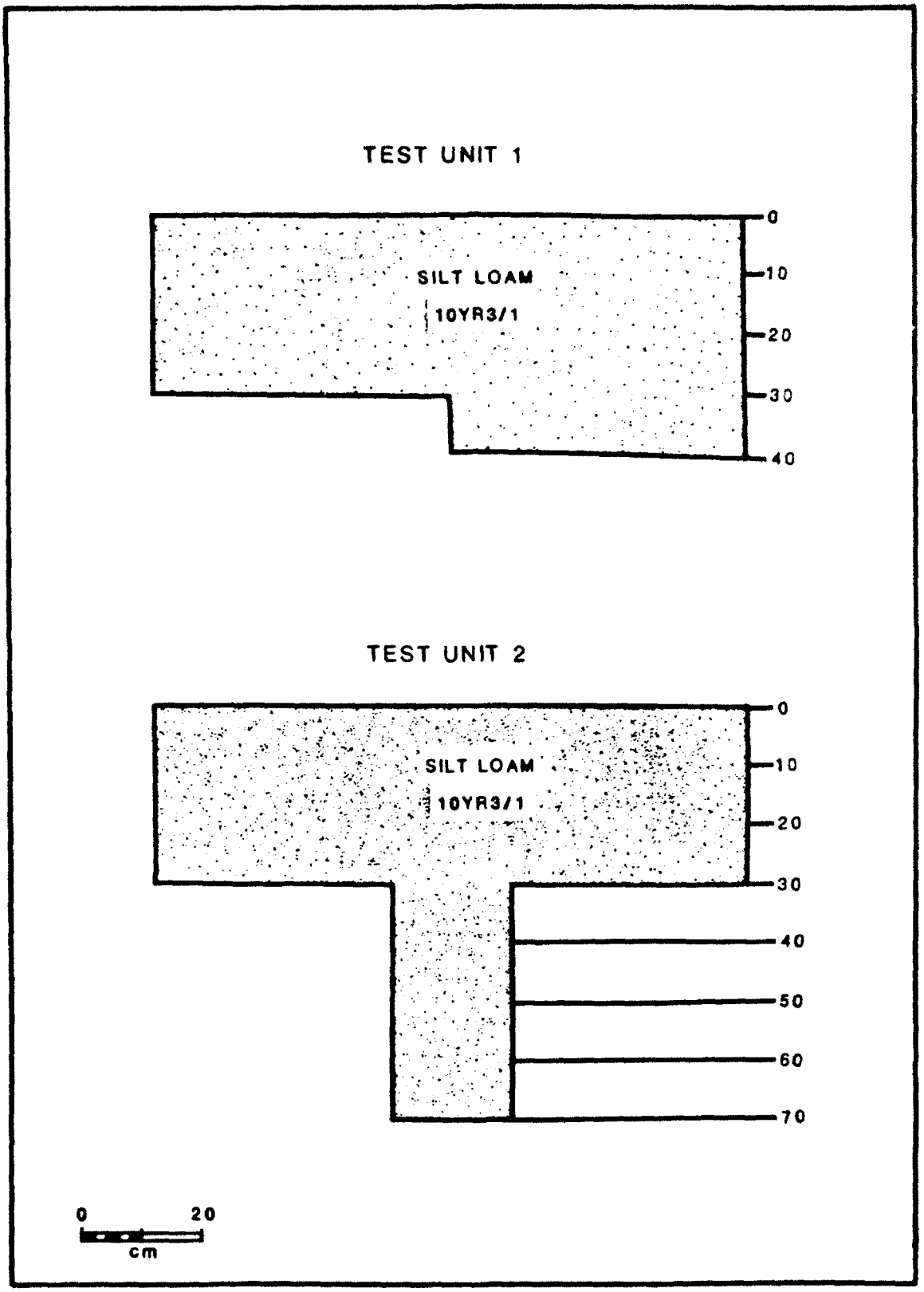

Figure 3. Profile drawings of 1 m x 1 m test units

When these impacts are coupled with an absence of cultural stratigraphy, features or clearly in-situ artifacts, it is difficult to conclude that the deposits are sufficiently intact to make further archeological work worthwhile.

HORIZONTAL AND VERTICAL EXTENT

The surface reconnaissance revealed that surface materials occur over an area roughly 150 m north-south by 300 m east-west (4.5 ha; 11.1 acres), of which approximately 20% extends onto COE property. The site is bounded on the north by Cedar Creek; on the south and east by a swale; and on the west by the limits of the surface scatter.

Our excavations demonstrate that the site is restricted to the plowzone (ca 15 cm - 20 cm) and is slightly deeper near Cedar Creek.

CULTURAL-HISTORICAL PERIODS REPRESENTED

The abundance of sand-tempered, cord marked ceramics and triangular arrow points suggests that the major component at the site may be Middle Ceramic (Plains Village), Smoky Hill Variant (A.D. 900 - 1300)(Brown and Simmons 1987:xVIII-10). Alternatively, the presence of a single Scallorn-like point in the ESA surface collection, in combination with an absence of shell-tempered wares suggests that the major occupation may be Early Ceramic (Plains Woodland), Valley Variant (50 B.C. - A.D. 400) or Grasshopper Falls Phase (A.D. 500 - 1000)(Brown and Simmons 1987:XIV-20, 25). Sand or grit-tempered, cord marked wares and arrow points are characteristic of all of these cultural units and evidence of other diagnostic traits such as burial techniques and house patterns has not been recovered. The evidence gathered to date generally suggests a Plains Woodland occupation as the dominant component.

The two large basally notched dart points recovered during the HPA testing and the flat-based lanceolate point in the COE collection suggest the possibility of an Archaic (Black Vermillion Phase?) component (Brown and Simmons 1987:XIV-10) but the data are not conclusive.

FUNCTION OF 14MH148

14MH148 has yielded a wide variety of tool types and other items that strongly suggest that the site functioned as a habitation occupied on at least a semi-permanent basis. The preponderance of interior and retouch flakes in the lithic debitage assemblage suggest that tool maintenance was a major activity. Some manufacturing also occured as evidenced by the presence of primary and secondary decortication flakes and preforms. Items such as modified flakes, projectile points and finished bifaces indicate cutting and scraping activities associated with the butchering/preparation of game and possibly hides. Whether the bone recovered from the site represents the remains of prehistoric foodstuffs or is associated with the historic Town of Barrett is not known. The abundant ceramics and the presence of what appears to be daub from structures constitute the best evidence of activities associated with a habitation. Conclusive evidence such as obvious midden accumulation, burials or the remains of structures has not been recovered from the site.

SIGNIFICANCE, IMPACTS AND RECOMMENDATIONS

Our investigations yielded no evidence to suggest that 14MH148 is eligible for inclusion on the National Register of Historic Places. Site characteristics that reflect negatively on its data potential include:

1. No evidence of features;

2. No evidence of undisturbed sub-plowzone deposits;

3. No evidence of preserved organic remains attributable to the prehistoric occupation.

Although our investigations revealed no significant archeological deposits that could be adversely effected by the District's proposed actions, the bulk of the site has not been adequately investigated. Therefore, while no significant archeological deposits will be endangered, no conclusions regarding the significance of the site as a whole can be drawn.

Adverse impacts anticipated as a result of the sale of the land primarily include uncontrolled collecting or digging by relic hunters. It is equally as likely that private ownership would confer protection not possible for public lands by limiting access by the general public. Other on-going impact caused by periodic flooding is unrelated to the presently proposed actions and will not be altered by them.

Because most of the site is already in private hands and no significant cultural deposits exist on Government-owned land, no **additional** adverse impact will result from the proposed action. Therefore, we recommend that no further archeological work be conducted prior to the sale of the tract.

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APPENDIX A
Glossary

Unmodified Chippable Stone. This is a raw material category and includes fragments of chert suitable for the manufacture of flaked stone tools that exhibits no evidence of modification. Specimens from which flakes have been removed are classified as cores or tested cobbles.

Tested Cobble. This is another raw material category that includes whole or nearly whole chert or quartzite cobbles that have no more than two flakes removed and that exhibit no further intentional modification. These are normally composed of poor grades of raw material.

Core. This is also a raw material category that includes cobbles or tabular pieces of good quality chert or quartzite from which more than two flakes have been removed and which show no modification for other uses. Cores recycled for use as hammerstones, choppers, etc. are classified under those categories.

Shatter. This category includes angular fragments of chert or quartzite resulting from various reduction processes. Some shatter may be confused with cobble fragments and fire-cracked rock, however, most of the latter are readily recognized.

Primary Decortication Flake. This category includes unmodified flakes in which ninety percent or more of the dorsal surface is covered with cortex. These are by-products of the initial stage of core preparation, core reduction and biface manufacture and are most likely to be found at quarry sites, workshop sites and base settlements. Specimens exhibiting use wear or intentional modification are classified as modified flakes.

Secondary Decortication Flake. This category includes unmodified flakes in which cortex covers less than ninety percent of the dorsal surface and that exhibit clear evidence of the removal of previous flakes. These are by-products of various stages of core preparation and biface manufacture and usually occur at quarry sites, workshop sites and base settlements. Flakes exhibiting cortex only on the striking platform are classified as interior flakes. Those exhibiting use wear or intentional modification are classified as modified flakes.

Preform. This category includes unstemmed bifacial artifacts and fragments thereof that do not appear to represent finished bifacial tools. Distinguishing characteristics include generally crude flaking (usually percussion) and a lack of use wear. Many occur as fragments that were broken during manufacture and discarded. These items represent the final stage of initial biface reduction, before being worked into finished tools.

Interior Flake. These flakes are normally produced during the latter stages of bifacial reduction. Distinguishing characteristics include a lack of cortex, steep platform angles, deep flake scars on the dorsal surface and a thick cross section. They may intergrade with some retouch flakes and may also be confused with decortication flakes struck from raw materials lacking cortex. Specimens exhibiting use wear or intentional modification are classified as modified flakes.

Retouch Flake. These flakes are produced during the final stages of bifacial reduction and tool sharpening or modification. Distinguishing characteristics include acute platform angles, shallow and wide scars on the dorsal surface and a thin cross section. Some specimens may be difficult to

distinguish from interior flakes. Those exhibiting use wear or intentional modification are classified as modified flakes.

Broken Flake. These are incomplete flakes that cannot be assigned to any other flake category with confidence. Most are small, thin fragments that are probably fragments of retouch flakes but lack a striking platform or other distinguishing attributes.

Biface. These are complete or fragmentary, unstemmed bifacial tools. Tip and midsection fragments of projectile points are normally included in this category but stemmed fragments are included in the projectile point category. Arrow point fragments are not included.

Dart Point. Any relatively large, symmetrical, bifacially worked artifact that has been modified for hafting, or any fragment that shows evidence of a hafting element is classified as a dart point. Tip and midsection fragments are normally assigned to the biface category.

Arrow Point. This category includes small, thin, symmetrical, pointed bifaces or any fragment thereof. A hafting element is often present but may be unobtrusive in some specimens.

Drill/Reamer. These specimens exhibit rotating wear on a pointed tip. We have classified long, thin, bifacially worked specimens as drills. These are probably reworked projectile points. Reamers include tools with a similar function that are made of fragments of chert or flakes that are not bifacially worked or modified for hafting.

Modified Flake. These are flakes that exhibit use wear or intentional modification for use as cutting or scraping tools. Working edges may be concave, straight or convex. Specimens exhibiting unifacial wear (shear chipping) are classified as flake scrapers while those exhibiting bifacial wear (wear chipping) are classified as flake knives.

Hammerstone. These are generally large chunks of chert or other hard stone that exhibit well defined zones of battering on prominent corners or edges. Some are rounded in appearance.

Flat Abraders. These are characterized by the presence of a flat or slightly convex areas on the face of a cobble on which the patination has been worn away and/or a greater degree of smoothness is present than is typical of the natural cobble surface. In the case of sandstone or quartzite close inspection will show that individual grains on the abraded surface are worn.

Edge-Ground Cobble. These tools are characterized by the presence of a well defined ground or abraded facet, shallow groove or wide indentation on the edge of a cobble. Some weathered cobbles may be mistaken for edge-ground cobbles but individual grains should be worn and there should be a difference in the amount of patination when compared with the remainder of the cobble.

Grinding Basin. These tools exhibit a shallow, smooth basin on the face of a cobble or slab of stone. These are usually made of a coarse grained stone and used for plant food processing.

Pitted Cobble. These cobbles have one or more pits that are U- or V-shaped in cross section. Those with V shaped pits may have been used in bipolar flaking as hard anvils while U shaped pits may have resulted from nut cracking.

These artifacts can be grouped into larger categories including raw materials (unmodified chippable stone, tested cobbles and cores), primary flintknapping debris (shatter, primary and secondary decortication flakes and preforms), maintenance debris (interior, retouch and broken flakes), bifacial and flake tools (modified flakes, bifaces, dart and arrow points, drills and

reamers), ground and pecked stone (hammerstones, flat abraders, edge-ground cobbles and grinding basins), ceramics, fire-cracked rock and minerals and miscellaneous lithics. No analysis of raw material types or possible heat alteration was conducted on the collections.

APPENDIX B

Project Participants

LAWRENCE L. AYRES supervised the fieldwork and wrote portions of the technical report. Mr. Ayres received a B.A. in antiquities from Southwest Missouri State University in 1980 and is ABT toward an M.A. in anthropology from the University of Arkansas. Mr. Ayres has also received a B.S.E. in secondary education at the University of Arkansas in 1987.

DAVID B. BOARD assisted in the field work and in the analysis of the artifacts. Mr. Board received a B.A. in anthropology from the University of Tennessee in 1985.

STEVEN M. IMHOFF assisted in the preparation of the technical report. Mr. Imhoff received a B.S. in sociology from the University of Tulsa in 1974 and an M.A. in anthropology from the University of Arkansas in 1982. He is a member of the Society of Professional Archeologists.

TIMOTHY C. KLINGER served as Principal Investigator and assisted in the preparation of the technical report. Mr. Klinger received an M.A. degree in anthropology from the University of Arkansas in 1977 and a J.D. from the University of Arkansas School of Law in 1982. Mr. Klinger is a member of the Society of Professional Archeologists and is a licensed attorney in the State of Arkansas.

SEAN ROBERTSON assisted in the preparation of the technical report. Mr. Robertson is currently working toward a B.S. in industrial engineering at the University of Arkansas.